EtherFast® Series

EtherFast 10/100 4-Port Analog Router

User Guide

LINKSYS®

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LIMITED WARRANTY

Linksys guarantees that every EtherFast 10/100 4-Port Analog Router is free from physical defects in material and workmanship under normal use starting at the date of purchase. If the product proves defective during this **one year** warranty period, call Linksys Customer Support in order to obtain a Return Authorization number. Warranty is for repair or replacement only. Linksys does not issue any refunds. BE SURE TO HAVE YOUR PROOF OF PURCHASE AND BAR CODE ON HAND WHEN CALLING. RETURN REQUESTS CANNOT BE PROCESSED WITHOUT PROOF OF PURCHASE AND BAR CODE. When returning a product, mark the Return Authorization number clearly on the outside of the package and include your original proof of purchase and bar code.

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FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment or device
- Connect the equipment to an outlet other than the receiver's
- Consult a dealer or an experienced radio/TV technician for assistance

Contents

Introduction

Congratulations on your purchase of a Linksys EtherFast 10/100 4-Port Analog Router -- the perfect stand-alone solution for multi-user LAN-to-Internet connectivity. The EtherFast 10/100 4-Port Analog Router from Linksys is the quickest and easiest way to connect up to four external 56K modems to your 10/100 network. The 10/100 4-Port Analog Router comes with 4 specially-designed RJ-45 modem ports and 4 10/100 RJ-45 ports -- connect your workstations directly to the router, or uplink to other hubs and switches for expanded Internet sharing.

The user-friendly Web interface gets you off to a running start -- every user on the network will be able to access the Internet in just minutes. The 10/100 4-Port Analog Router connects up to four external modems to seperate dial-up ISP accounts. Connect four 56Kbps modems and you can enjoy blazing 224Kbps bandwidth.

Since it also comes equipped with 4 dual-speed RJ-45 ports, your 10/100 Analog Router gives you all the same features as a dual-speed hub. Whether you've got a 10BaseT Ethernet or a 100BaseTX Fast Ethernet network, the 10/100 Analog Router will automatically adjust each port to run at the correct speed. The 10/100 Analog Router has a dynamic uplink feature for increased expandability, 11 intelligent diagnostic LEDs, and an ease-of-use that is unsurpassed. Backed with free technical support and a one-year warranty, the EtherFast 10/100 Analog Router is the best way to connect your network to the Internet!

The 10/100 Analog Router's features include:

- Share 4 External Modems and 4 ISP Accounts On Your 10/100 TCP/IP Network -- 4 RJ-45 LAN Ports and 4 Serial Modem Connections
- Connects 4 Modems at Up To 56Kbps for an Amazing Maximum Bandwidth of 224 Kbps
- Works With Virtually All V.90 and Hayes Compatible External Modems
- Also Supports 4 10/100 Ethernet Connections
- Stand-Alone DHCP Server
- Easy-to-Use Web Interface
- Each Dual-Speed RJ-45 Port Automatically Senses and Negotiates Between 10Mbps and 100Mbps Network Connections
- Fully Functional IP Router
- Uplink Option For Expansion to Other Hubs or Switches
- Helpful User Guide Features Instructions For Setting Up the Right Protocols For Flawless Network and Interent Sharing
- IPX Routing
- Fast Ethernet Power Offers Hot Performance for Games, Multimedia, and File Transfers
- View Performance, Activity, and Utilization Statistics For All 4 Modems On the Router Using the Web Interface
- 11 Easy-to-Read LED Displays
- Free Technical Support
- Free Firmware Upgrades
- 1 Year Limited Warranty

About Fast Ethernet

As the demand for desktop video, multimedia development, imaging, and other speed-intensive applications continues to rise, the need for high performance, fault tolerant LAN technology will become more critical.

Standard **Ethernet**, which has been the most popular networking technology to date with a maximum data throughput of **10 Megabits per second**, is becoming insufficient to handle the latest video, multimedia, and other speed-intensive Client/Server LAN applications.

Among the solutions to the problem of network speed, **Fast Ethernet** has emerged as the most viable and economical. Capable of sending and receiving data at **100 Megabits per second**, it is more than fast enough to handle even the most demanding video and other real-time applications.

Although there are a number of different competing Fast Ethernet implementations, **100BaseTX** is by far the most popular. Operating on two pairs of Category 5 unshielded twisted-pair (UTP) cabling, 100BaseTX supports high speed signaling and is relatively inexpensive. Because it uses four wires for data transmission and the same packet format, packet length, error control, and management information as 10BaseT, 100BaseTX can be made to communicate with slower 10BaseT equipment when routed through a switch.

This **backward compatibility** is one of 100BaseTX's major advantages over other forms of Fast Ethernet; it allows critical, speed-dependent network segments to be upgraded to 100BaseTX speeds as needed without re-wiring, refitting, and retraining an entire site. Networks can now mix both slow and fast network segments for different users or departments.

Publishing, R&D, video, multimedia, or accounting departments can enjoy a 100Mbps pace, while other corporate segments can operate at slower and more affordable 10Mbps speeds.

Every 10/100 RJ-45 port on your Analog Router is capable of running at either 10Mbps or 100Mbps, allowing you to mix and match economical 10BaseT hardware with high performance 100Mbps network cards, hubs, switches, and other equipment.

Before You Begin

Before you install your EtherFast 10/100 4-Port Analog Router, you should take careful consideration and ensure that several requirements have been met on your network.

The router supports 10Mbps or 100Mbps connections. It also supports multiple external modem connections. Please be sure that your network adapters are installed properly and working, you have a separate telephone line and an Internet Service Provider (ISP) account for every modem you plan to use. You must have or obtain the access phone number, user account and the password for each of your ISP accounts. If you were using a Proxy software previously to connect to the internet, use the instructions that came with the software to remove the software from your computer. The modem router will not work properly if proxy software has been previously installed.

Workstations on your network must have TCP/IP installed and configured to obtain an IP address automatically using Dynamic Host Control Protocol (DHCP). If you are using Windows 95, Windows 98 or Windows NT, detailed instruction about setting up TCP/IP on Windows 98 or 95 workstations are includ-

ed in this guide on page 12. Suggested settings and instructions for Windows NT are included in the appendix. Setup, configuration, and troubleshooting of the TCP/IP protocol under any other operating system is solely up to the user

Each workstation connected to Analog Router must be running a Web browser (Netscape Navigator 3.0 or newer, or Internet Explorer 3.0 or newer) in order to connect to the Internet. Any browser you use to configure the Analog Router must support HTML 3.2 or later, and it must support Java and frames.

After the router settings are saved, all you need to do in order to access the internet is open your browser. The router will do the rest.

Planning Your Network

The rules that govern how nodes and hubs are distributed across a network are important to ensure the integrity of your data. Cabling specifications, distance limits, and other topology rules must be followed in order to avoid collisions or data loss.

The Analog Router is equipped with 4 10/100 UTP ports that can automatically adjust to either 10Mbps or 100Mbps speeds. Each port can operate at either speed, completely independent of the other ports' speeds, and can be connected to a workstation, file server, print server, hub, or another node with twisted-pair cabling.

Although there are different grades of cabling, you must use EIA 568 Category 5 unshielded twisted-pair (UTP) for each connection you make, and each cable should not exceed **100 meters**, (328 feet), in length. Fast Ethernet networks require Category 5 cabling. Category 5 cabling can be obtained at most computer stores, or you can crimp your own.

Here are some important cabling rules to follow:

- Computers should never be connected directly together on a network. They should **always** be connected to a hub.

- The maximum cable length from a node to a 10BaseT or 100BaseTX repeater, switch, or hub is **100 meters** (328 feet).

- Only **two** 100Mbps Fast Ethernet hubs can be cascaded, (or *uplinked*), together. To cascade more than two 100Mbps hubs, a switch must be used.

- The maximum distance between 2 100BaseTX hubs (or the Analog Router and a 100BaseTX hub) without a switch is **5 meters** (16.4 feet).

- The maximum distance between 2 10BaseT hubs, (or a 10BaseT hub and an Analog Router), is **100 meters** (328 feet).

Hardware Setup

1. Remove the EtherFast 10/100 4-Port Analog Router from its packaging. The area you plan to place the router must be well ventilated. Leave at least 4" behind the router to make room for the cable connections. Leave 2" on each side and 1" on top to ensure good ventilation.

2. Connect the AC adapter to the Analog Router DC12V power input, and plug the other end into the nearest wall outlet. It will take between 10 and 30 seconds for the router to fully boot up.

3. Connect up to four external modems to the Modem connectors on the back of Modem Router (4 RJ-45 ports to the right of the 9-pin console port) using the provided RJ-45 to serial cables. Do NOT connect your modems to the Ethernet ports on the router. If you find that you need extra cabling or adpaters, you can find what you need at your local Linksys vendor.

4. Connect your workstations or hubs to the four 10/100 auto-sensing ports on the back of the router. The port closest to the AC adapter can be readily used to uplink to another hub. See page 11 for uplinking information.

5. If you want to use Command Line Interface, connect a PC or terminal to the console port using the supplied serial null modem cable.

Connecting Nodes to the Analog Router

The Analog Router can be connected to either 10Mbps or 100Mbps PCs, workstations, file servers, print servers, or other hardware. When powered up, each of the router's 10/100 ports will automatically adjust to the proper speed, as determined by the speed of the hardware or node connected to the port.

Connect each of your PCs, workstations, file servers, print servers, or other network nodes to the Analog Router one by one. Each node should be connected to the Ethernet connections on the router with a straight-through, RJ-45, Category 5 cable. Each cable should be less than 100 meters (328 feet), in length. Ready-to-use network cables of various lengths can be purchased at most computer stores. If you wish to crimp your own cabling for custom sites or lengths, see the appendix for cabling specifications.

When connecting a PC to the Analog Router, either the computer or the router must be powered **OFF**. If both the computer and the router are turned on while the connection is completed, the network may act erratically. If this happens, reset the router by turning it off and then back on again.

If the 4-Port Analog Router's **uplink** switch next to the last port is enabled (if the button is pushed in), then the port on the router closest to the AC adapter jack is set to be connected to another hub or switch. If you'd like to use the port to connect a workstation, simply release the uplink button.

Connecting the Router to Other Hubs or Switches

If you are connecting the Analog Router to a Fast Ethernet hub, remember that Fast Ethernet rules only allow two hubs to be connected together, or *cascaded*, within a single repeater domain. This means you can only uplink to or from one other device on a Fast Ethernet network.

To uplink the router, simply push the uplink button on the back of the router next to the AC port. You may need to use a pen or other small pointed object. Connect a regular straight-through Category 5 cable from the Analog Router's uplink port to any regular network port on the hub or switch being uplinked. The Analog Router will automatically determine the optimum speed of the device being attached to it.

The router can be uplinked to other 100Mbps hubs at a distance of 5 meters (16.4 feet) -- just like Fast Ethernet or 10/100 hubs.

Protocol Setup For Windows 95 and 98

Each PC that will be connecting to the Internet must have TCP/IP installed and it must be configured to the following settings.

The instructions below apply to Windows 95 and 98. Suggested setup instructions for Windows NT 4.0 are listed in the Appendix of this guide. The setup, configuration, and troubleshooting of TCP/IP on any other operating system is strictly up to the user. Refer to the documentation and instructions accompanied by the operating system.

1. Click on the **Start** button, select **Settings**, **Control Panel**. The Control Panel window will be displayed.

2. Double-click on the **Network** icon.

3. Check the list of installed network components. If TCP/IP is not installed for your network adapter, install it now by clicking the **Add** button. If TCP/IP is already installed, go to step 7.

4. In the *Network Component Type* dialog box, select **Protocol** and click **Add**.

5. In the *Select Network Protocol* dialog box, select **Microsoft**.

6. In the Network Protocols area of the same dialog box, select **TCP/IP**, then click **OK**. You may need to provide your Windows 95 or 98 CD to complete the installation.

7. Highlight **TCP/IP** in the list of Network Components by clicking on it once, and then click on the **Properties** button.

8. Check each of the tabs, and verify the following settings:

- **Bindings:** Make sure that *Client for Microsoft Networks* and *File and printer sharing for Microsoft Networks* are selected

- **Gateway**: All fields are blank

- **DNS Configuration**: *Disable DNS* is selected

- **WINS Configuration:** Make sure that *Use DHCP for WINS Resolution* is selected.

- **IP Address:** Make sure that *Obtain IP address automatically* is selected

Click **OK** to the TCP/IP Properties window. Click **OK** to the Network window. Windows may need to copy some files and ask you for the Windows 95/98 CD-ROM. After you are at the desktop, reboot your PC. If Windows asks you to restart automatically, click **Yes**.

To view your TCP/IP settings after the computer has rebooted, click on **Start**, then **Run**. Type **WINIPCFG** and click **OK**.

Internet Settings

If you were previously using a dialup adapter or proxy software on your computer to connect to the Internet, you must make changes to your Internet settings.

1. Click the **Start** button, select **Setting**, then **Control Panel**. The Control Panel window will display.

2. Double-click on the **Internet** icon.

3. Click on the **Connections** tab. If the option to choose a dialup adapter or the option for a proxy server is selected, remove the check or the bullets from these options. If you have the option to connect to the Internet via the network, select it (the options that appear will be different based on the version of the browser).

4. Click **OK** and reboot your system.

To set up the router, you will need to have your ISP's phone number, your account name, and your password. DNS IP addresses may also be required for Windows NT users.

After the EtherFast 10/100 4-Port Analog Router is configured, all you have to do to access the Internet is open your browser. The router does the rest for you.

Configuring the Router

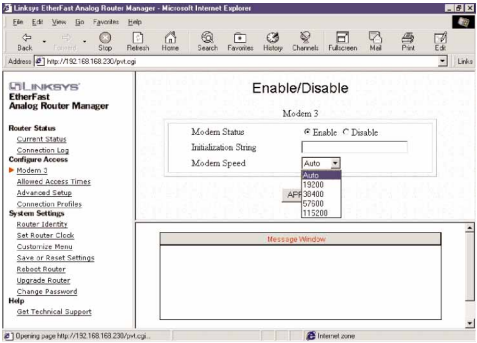
1. Open your Internet browser on one of the workstations you configured for TCP/IP on the previous pages.

2. Use your browser's **Open** command to enter the following URL: http://192.168.168.230

3. The default password "password" is already entered for you. Click **Log On**! button to log on. Don't forget to use the System Tools menu later to change the password. Do Not click “check here to install additional features.”

4. You **may** be asked to choose from a list of menu items. Choose *Basic Internet Access* (the default) only and then press the **Apply** button.

5. You may reduce or close the Status window. On the Main menu (on the left hand side of your browser screen), select the modem (Modem 1, Modem 2, Modem 3, Modem 4) you want to make connection with and following screen will appear.

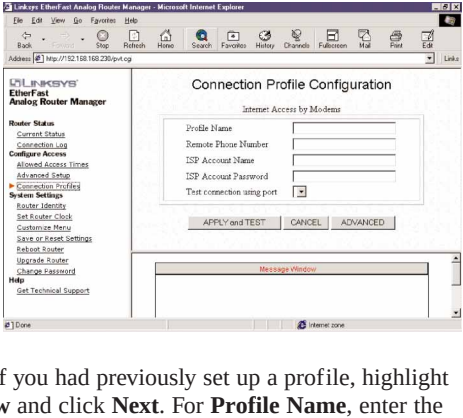


6. Input the modem initialization string in the Initialization String box. In most cases, you do not need to put in any initialization string. If you are in doubt, just leave it blank or consult the user manual of the connected modem.

7. For Modem Speed, in most cases, **Auto** will work with most 56K modems (K56flex, X2 or V.90). However, for some slow speed modems (28.8K, 14.4K, 9600), you might need to manually select a lower speed (e.g. 19200). You might achieve the highest possible speed by testing it in step 13 later.

8. On the Main menu, click on **Connection Profiles** under the Configure Access heading.

See a picture of the screen on the next page.



9. If you had previously set up a profile, highlight **New** and click **Next**. For **Profile Name**, enter the name of your ISP or any other name that makes sense to you.

10. For **Remote Phone Number**, enter the phone number of your ISP.

11. For **My System Name**, enter your username assigned by your ISP.

12. For **My System Password**, enter the password for your ISP account.

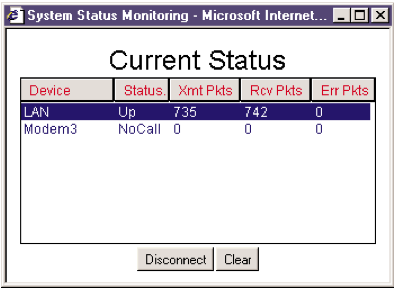
13. Use the pull down menu to select a connected modem port for the Analog Router to use when testing the account information and connection. Click **APPLY and TEST** button. The Message Window will tell you if your connection is successful.

Follow step 5 to step 13 above to setup all the other modems and ISP accounts, if any.

Using the Router Status Windows

Current Status

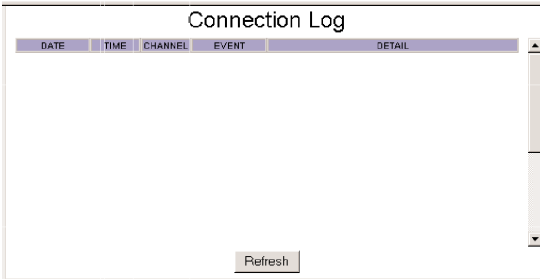
This window pops up in a seperate browser window every time you log on to the router.



This window can be closed or reduced if you don't need it. It displays the number of packets sent or received by the LAN and the modem(s). These numbers can be reset by highlighting the option and clicking on the **Clear** button. If you highlight a modem connection and click on **Disconnect**, that particular connection will be reset. Disconnecting a modem will drop one of your Internet connections.

Connection Log

This window displays log of the connections.



This window is used mainly for troubleshooting and administration purposes.

Message Window

This window displays any messages sent by the router to the system. It will display error messages, command strings, and general connection status information.

You will notice that the user interface for the EtherFast 10/100 4-Port Analog Router utilizes frames. On the right hand side of your screen, the message window occupies the lower frame. Also, the message window frame is resizable.

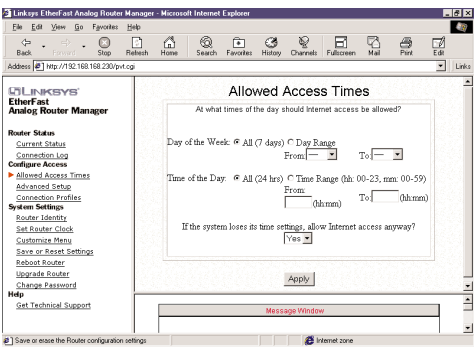
Advanced Features

You can fully configure your EtherFast 10/100 4-Port Analog Router by accessing the advanced user menus in the Web-based configuration program. Some of these features require a certain amount of expertise to configure properly -- if you are not sure how to set up some of the Analog Router's features, either leave them alone or consult your network administrator.

Allowed Access Times

This feature allows network administrators to select the specific times that users will be allowed to access the Internet through the Analog Router.

At the main menu, select **Allowed Access Times** under the Configure Access heading. You will see the following screen:

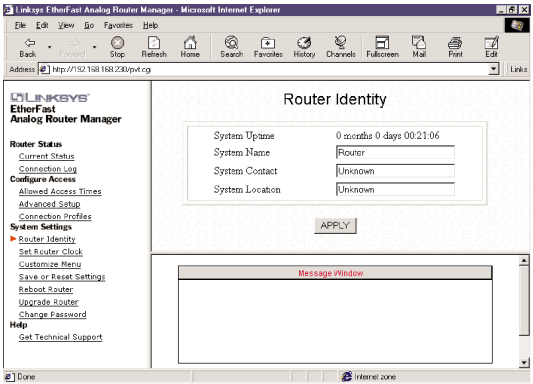


Set the times to whatever setting you would like. In order for the acess limitations to work properly, you must also configure the Analog Router's clock on page 22.

Router Identity

Under the Router Identity menu, you can set the name, location, and other variables for your EtherFast 10/100 4-Port Analog Router. To access the menu, click on **Router Identity** under the System Settings heading.

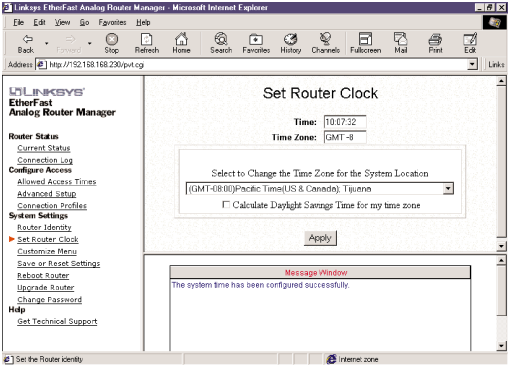
You will be able to enter the data shown below:



Enter any settings that you'd like, then click on the **Apply** button.

Set Router Clock

The EtherFast 10/100 4-Port Analog Router lets you configure the router's internal clock.



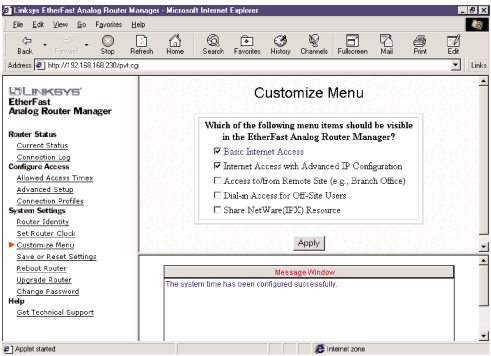
To do this, click on **Set Router Clock** under the System Settings heading.

Choose the correct time zone for your location and click **Apply**.

Customize Menu

With the Customize Menu, it is possible to configure the EtherFast 10/100 4-Port Analog Router to perform advanced functions like IPX routing, dial-in access, and remote access. These tasks should only be attempted if you have hands-on experience in their execution.

You will notice in the example that the first two features on the menu are active. Any of the features other than Basic Internet Access (the first item on the list) that require you to manually enable them are to be used by experienced system administrators only. Additionally, Linksys **will not** at this time provide any technical support for these extra features.



To access this menu, click on **Customize Menu** under the System Settings heading. When you are finished, click **Apply**. See the Appendix of this guide for more information about the unsupported functions.

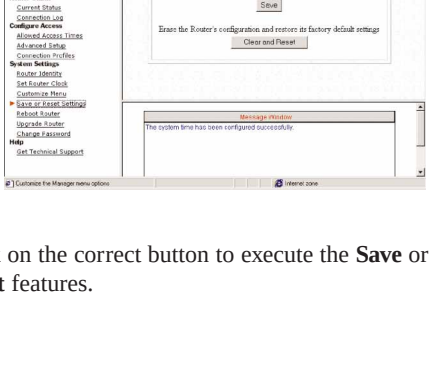
Linksys only provides technical support for Basic Internet Access. The configuration of all other options is solely up to the user.

Save or Reset Settings

If you are making changes to your EtherFast 10/100 4-Port Analog Router, it is a good idea to save your settings. The router is capable of "hard storage" – it writes your settings to it's internal firmware. After you save your settings, you can safely unplug the router or move it to a different location and your settings will remain intact.

You can also use this menu to restore the Analog Router to its factory defaults. This feature is helpful if you make a mistake that you cannot fix. All of your work will be erased if you reset the router, including your settings for your ISP accounts and all of your modem information.

To access this menu, click on **Save or Reset Settings** under the System Settings heading.

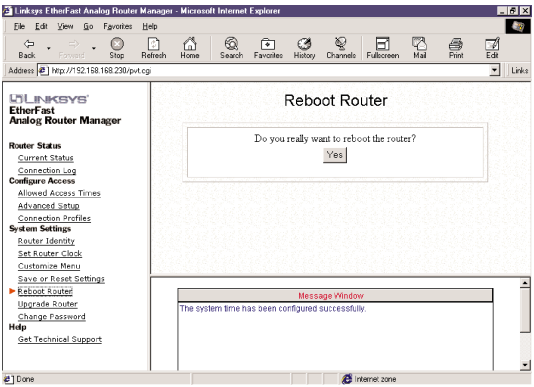


Click on the correct button to execute the **Save** or **Reset** features.

Reboot Router

This feature will reboot the router and reset all of its modem connections. A reboot will leave the router's RJ-45 network connections intact, but any user that is accessing the Internet through the router will be bumped off. In some cases, a router reboot is necessary to remedy lock-ups or to clear the memory buffers.

To reboot the router, click on **Reboot Router** under the System Settings heading.

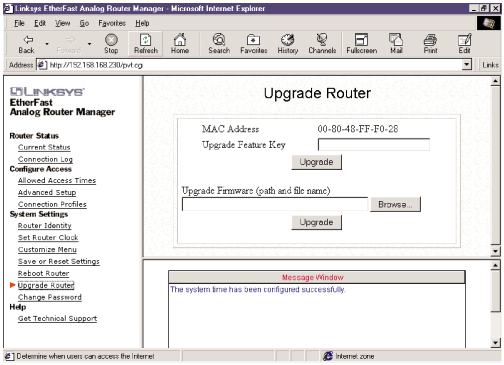


You will be asked to confirm the reboot. Do so by clicking **Yes**.

Upgrade Router

The upgrade feature can be used when firmware upgrades are made available by Linksys. Check the Linksys website at **http://www.linksys.com** regularly to collect the lastest version of firmware for the EtherFast 10/100 4-Port Analog Router.

Detailed download and installation instructions will be provided with each version of firmware.

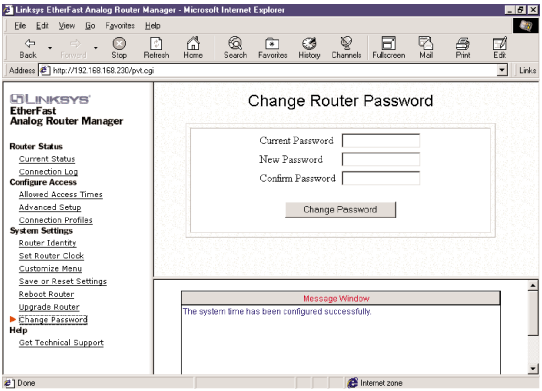


To access the upgrade window, click on **Upgrade Router** under the System Settings heading.

Change Password

This window lets you change the login password for your EtherFast Analog Router. It is recommended that you perform this function before logging out of your first session.

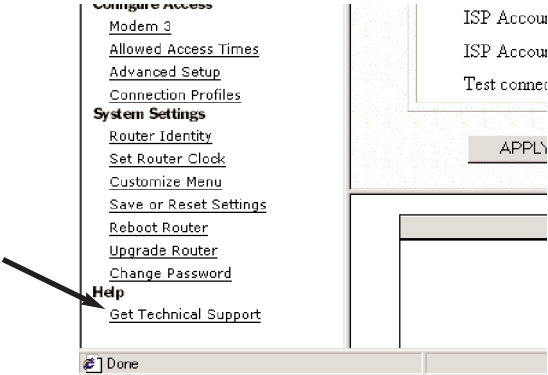
To access the password window, click on **Change Password** under the System Settings heading.



You will be asked to supply your surrent password, then the new password. You must confirm your new password by typing it twice. Click **Change Password** to make the change. Remeber to save your settings when you are finished. Write down your new password and keep it in a safe place.

Getting Help

If you have questions about your Analog Router or if you would like to call or email Linksys with a specific technical question, click on **Get Technical Support** under the Help heading. This will direct your workstation to the Linksys web site where you will find substantial support databases, as well as various ways to contact us.



Using the Command Line Interface

The EtherFast 10/100 4-Port Analog Router can be configured via a null modem serial connection and a PC running a terminal program.

The router is then instructed through a **command line interface** instead of the Web interface. In order to obtain documents on how to set up and use the command line interface, go to the Linksys web site at http://www.linksys.com

Please note that Linksys only provides **limited** technical support for the command line itnerface of the EtherFast 10/100 4-Port Analog Router.

LEDs

Your EtherFast 10/100 4-Port Analog Router is equipped with eleven "smart" LEDs that you can use for diagnostic purposes. They are explained below.

• Modem Activity

These LEDs will light up if the corresponding modem port is currently hosting an active modem connection. The LED flickers when the modem transfers or receives data. The LED will be **off** the rest of the time (even if the modem is connected and turned on).

• LAN Link/Act/Speed

These LEDs will light up red if a 100Mbps connection is detected on the corresponding RJ-45 10/100 port. If a 10Mbps connection is detected, the light will be green. The LEDs will flicker when activity is detected on any of the 10/100 connections.

• Collision

The 10M LED will light up when collisions are detected on the router's 10Mbps backplane. The 100M LED will light up when collisions are detected on the router's 100Mbps backplane.

• Power

Indicates that the router is powered on.

Appendix

Twisted-Pair Cabling

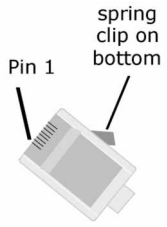
There are different grades, or categories, of twisted-pair cabling. Category 5 is the most reliable and widely compatible, and is highly recommended. Category 3 is a good second choice. Straight-through cables are used for connecting computers to a hub. Crossed cables are used for connecting a hub to another hub (there is an exception: some hubs have a built-in uplink port that is crossed internally, which allows you to uplink hubs together with a straight cable instead).

You can buy Category 5 cabling that is pre-made, or cut and crimp your own. Category 5 cables can be purchased or crimped as either straight-through or crossed. A Category 5 cable has 8 thin, color-coded wires inside that run from one end of the cable to the other. All 8 wires are used. In a straight-through cable, wires 1, 2, 3, and 6 at one end of the cable are also wires 1, 2, 3, and 6 at the other end. In a crossed cable, the order of the wires change from one end to the other: wire 1 becomes 3, and 2 becomes 6.

straight-through cable			crossed cable		
Wire		Becomes	Wire		Becomes
1	➡	1	1	➡	3
2	➡	2	2	➡	6
3	➡	3	3	➡	1
6	➡	6	6	➡	2

The color code for the 4 wires should be as follows: **Wire 1**, white with an orange stripe; **Wire 2**, orange; **Wire 3**, white with a green stripe; **Wire 6**, green. The other four wires have to be connected as follows: **Wire 4**, blue; **Wire 5**, white with a blue stripe; **Wire7**, white with a brown stripe, **Wire 8**, brown.

To figure out which wire is wire number 1, hold the cable so that the end of the plastic RJ-45 tip (the part that goes into a wall jack first) is facing away from you. Flip the clip so that the copper side faces up (the springy clip will now be parallel to the floor). When looking down on the coppers, wire 1 will be on the far left.



Protocol Setup For Windows NT

The instructions below apply to Windows NT. These instructions are for your reference. The setup, configuration, and troubleshooting of TCP/IP on NT may differ if you are on an existing network or if the computer you are using has more than one network adapter installed. Refer to the documentation and instructions accompanied by the operating system or contact your system administrator for any special settings.

1. Boot up NT and log in as *administrator*.

2. Click on the **Start** button, select **Settings**, **Control Panel**. The Control Panel window will be displayed.

3. Double-click on the **Network** icon.

4. Click on Protocols. Check the list of installed network components. If TCP/IP is not installed for your network adapter, install it now by clicking the **Add** button. If TCP/IP is already installed, go to step 6.

5. In the *Select Network Protocol* dialog box, select **TCP/IP Protocol** then click **OK**. You may need to provide your NT CD-ROM to complete the installation.

6. Highlight **TCP/IP** in the list of Network Components by clicking on it once, and then click on the **Properties** button.

7. Check each of the tabs, and verify the following settings:

• **IP Address:** Make sure that *Obtain an IP address from DHCP server* is selected.

• **DNS:** You may have to enter the IP address of the router and/or the DNS IP address of your ISP.

• **WINS Address:** Leave all fields blank.

Click **OK** to the TCP/IP Properties window. Click on **Bindings**. Click **OK** to the Network window. Windows may need to copy some files and ask you for the Windows NT CD-ROM. After you are at the desktop, reboot your PC. If Windows asks you to restart automatically, click **Yes**.

You may need to manually enter your DNS entries later. You can get these by contacting your Internet Service Provider.

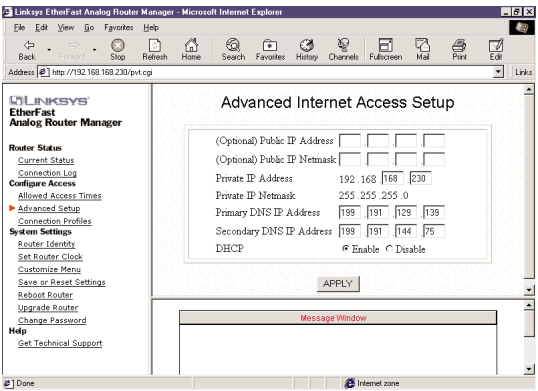
Unsupported Advanced Features

The following features are for use by network administrators **only**. These options can be enabled through the Customize Menu option. Linksys will not provide any technical support for these features. Linksys **only** provides technical support for Basic Internet Access. The configuration proceedures for all the options listed on pages 35 through 37 are solely up to the user.

Advanced Setup

This feature is for network administrators only. It will only display if Internet Access with Advanced IP Configuration is selected in the Customize menu. You should use this feature only if you need to configure special IP or DNS settings.

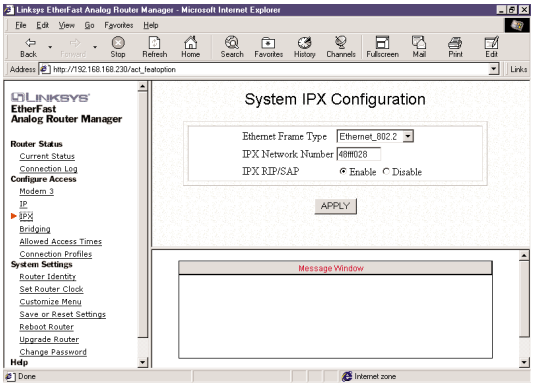
To access the Advanced Setup menu, click on **Advanced Setup** under the Configure Access heading.



Enter the appropriate settings, then click on the **Apply** button.

IPX Configuration

You can manually configure the EtherFast 10/100 4-Port Analog Router's IPX settings for intra-network communication. This option is available when **Share NetWare (IPX) Resource** is selected in the Customize Menu.



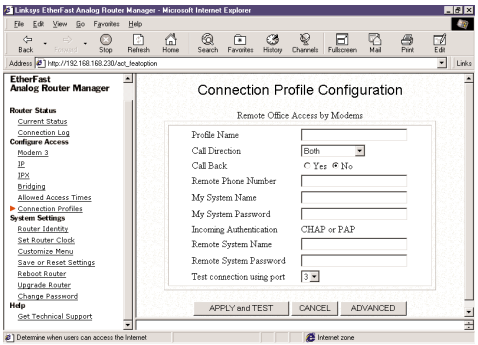
You can set the frame type, IPX network number, and you can enable or disable the IPX RIP/SAP setting.

Remote Dial-Up Configuration

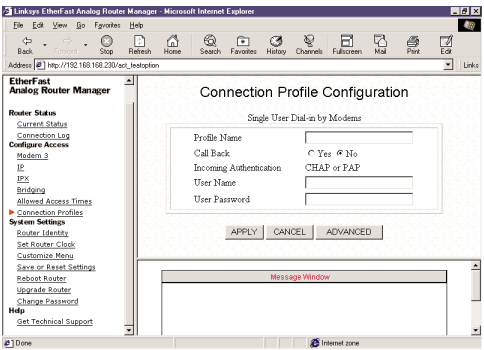
You can set up your 4-Port Analog Router to allow remote dial-up access. Click on Connection Profile under the Configure Access Heading. Enter your desired profile name and other information.

You can configure the router to allow mulitple user dial-up access or single-user dial-up access.

Multi-user



Single User



Troubleshooting

My modem doesn't dial out:

• Check the cable connection and wiring. Use a different cable or phone wire. Reset the modem and the router.

My modem dials out but a connection can't be established with the ISP:

• See the error message that appears in the message window. If it is related to password authentication, check your user name and password. If connection can't be established, check the phone number or try a different phone number from your ISP. You may have to modify the speed on the modem setting by changing the **Auto** mode to a different speed.

The modem LED on the front of the router doesn't come on when the modem is connected and powered on:

• The LED for the modem only turns on when the modem is connected to the ISP. If the modem is idle (if it hasn't dialed out yet) the LED will be off.

The Collision LEDs flicker constantly

• Check your RJ-45 cables to make sure they are properly wired. Check your network cards for faulty connections. Try connecting to a different Ethernet port on the router. Turn the router off and then turn it back on again.

The computer connected to port 1 will not link see the rest of the LAN and the Link\Activity LED on the front of the router is not lit:

• You may have the port set in Uplink mode. When the Uplink button is pushed in, port 1 should be used to connect to another hub or switch. Simply push the button out using a small screw driver, paper clip or a small sharp object like a pen.

I get DHCP errors on one of the computers connected to the router:

• Check the network card in the computer to make sure it is setup properly. Remove and reinstall TCP/IP on that computer. If you had proxy software installed on the computer previously, follow the instructions that came with the software to restore the computer to its previous settings.

None of the computers can obtain the proper IP:

• The DHCP portion of the router may be disabled. Setup a computer with the following TCP/IP settings instead of using the DHCP options:

IP Address 192.168.168.240
Subnet Mask 255.255.255.0
Gateway 192.168.168.230

Reboot the computer. Run WINIPCFG or IPCONFIG to verify the above settings. Use your web browser to access the router. Restore the router to its original factory settings by using the using the **Save or Reset Settings** option under the System Settings header, (see page 24).

Specifications

Model	EFROU44 10/100 4-Port Analog Router
Standard	IEEE 802.3, IEEE 802.3u, RS-232C, v.34, v.90
Protocol	Asyn PPP Modem Connection, CSMA/CD
Max Speed	
	100Mbps (for 100BaseTX) 10Mbps (for 10BaseT) 115200bps (serial)
Ports	4 combo RJ-45 10BaseT/ 100BaseTX Ports 4 RJ-45 Modem Ports 1 9-Pin Serial Console Port
Cabling	
10BaseT	Category 3 or 5 UTP/STP
100BaseTX	Category 5 UTP/STP
LED Indicators	Power, 100Mbps Collison, 10Mbps Collision, Modem Act, LAN Link/Act/Speed
Power	12V DC
Dimensions	2.5” x 5.4” x 1.4”
Unit Weight	1 lb.

Customer Support

For help with the installation or operation of your EtherFast 10/100 4-Port Analog Router, contact Linksys Customer Support at one of the phone numbers or Internet addresses below.

Customer Support	949-261-1288
Fax	949-261-8868
Bulletin Board	949-261-2888 (33.6K, 8-N-1)
Email	support@linksys.com
Web	http://www.linksys.com
FTP Site	ftp.linksys.com

http://www.linksys.com